

MARINE ENVIRONMENTAL POLLUTION IN NIGERIA AND ITS POSSIBLE IMPLICATION AND SOLUTION

Gbogbor Jennifer Yoromar, Ph.D

School of General Studies, Nigeria Maritime University Okerenkoko, Delta State
Jenywhyte20@gmail.com

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Umezurike J. Ezugwu, Ph.D

School of General Studies, Nigeria Maritime University Okerenkoko, Delta State
umezurikejohnnezugwu@gmail.com

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Abstract

The immeasurable level of environmental pollution in Nigeria has in no minimal way affected the ecosystem to include, microbe, plant, animal, ocean and earth. In recent decades, with the development of industry, deposits from illegal bunkery, gas emission, and various substances flowing into the ocean from land, have disturbed and polluted the ocean, to an extent that the shipping and transportation of goods and services becomes difficult. These threats have dealt with the biosphere and resulted to various environmental damages and pollution. However, the reason for the said environmental degradation is tied to unethical activities often carried out by both indigenes and non-indigenes that have little or no knowledge of the health and economic implications of environmental hazards. Furthermore, the marine environmental pollution which has shortchanged the expectations of national maritime industry, equally, affects the fishing rate and the agricultural products of the riverine communities. Using expository method of explanation, we will show how putting up strategies and involving both government and members of the society, in implementing maritime policies and sanctions will help in reducing environmental pollution and degradation, for marine environmental sustainability.

Keywords: Marine Environment, Pollution, Ecosystem, Ethics, Expository

Introduction

Marine pollution occurs mainly in the gulf near the mainland. This happens due to the existence of solid waste and poor water exchange which in turn increases the temperature, pH, salt content and quantity of traits change. This undermines the ecological orderliness that supposed to exist in the sea and constitute a hazardous atmosphere for both plants and animals (Guo and Martinez, 2017). Marine pollution is characterized by oil pollution, red tide, accumulation of toxic substances, plastic pollution and nuclear pollution, etc. The most polluted waters are the Baltic Sea, the Mediterranean, Tokyo Bay, New York Bay, Gulf of Mexico and so on. Coastal pollution is serious in Japan, the United States, Western European countries and the former Soviet Union countries. However, environmental pollution and degradation such as soil pollution, flooding, climate change, desertification, erosion etc., makes it difficult for the thriving of agricultural products and aquaculture. “These environmental problems orchestrated by frequent oil spillage, water pollution and soil pollution that are dangerous to the environment” (Inyang, 2019), ushered in environmental decadence, which has resulted to severe nutrient depletion, poor crop and harvest, environmental molestation and obstruction of biodiversity in the nation (Binraban, 2012). Apart from the catastrophe done on the agricultural dividends, human beings, plants and animals are adversely affected too. With all these, it is clear that marine pollution is the reason for the mail down in our national economy. A nation that survives or depends firmly on the oil and gas, like ours, would not achieve much in the presence of the environmental deformation that often distort the movement of goods from place to place or one country to another.

Furthermore, environmental pollution is more dangerous than war. This is because as war is a threat against human beings, environmental pollution is a threat against human beings, animals and plants (Lallanilla, 2020). It is in view of this that this research is done to engage all hands on deck in curbing marine environmental pollution, in order to have a dependable environment that enhances peace, for the growth and development of habitats and the society at large. After all, “damage to the marine resources, marine development and marine environmental quality, is damage to mankind” (Gold and Petrie, 1993). Therefore, the marine environmental protection is imminent and cannot be overemphasized. In this paper, we will analyze some of the marine environmental pollution incidents and demonstrate how the incidents have dealt with the biospheres and economy of the nation, and put forward specific measures for mitigating, protecting and addressing marine related environmental problems. This paper is divided into three sections. The first section deals with the historical analyses of marine pollution in Nigeria. At this juncture, it will be shown that the history of marine pollution has a strong connection or attachment with the nation's natural resources, industrialization and urbanization. The second section will expose the effects of marine pollution. This will help to state the extensive impacts of marine pollution to the flora, entire ecology and living resources, and how it can lead to eutrophication effluent, which in turn, causes death of marine plants and animals. The third section will establish control and preventive measures of marine pollution. Here, it will be maintained that the only way marine pollution can be addressed and environment sustained is through the implementation of marine polices and legislative measures, and raising of ecological consciousness, through education and recycling of non- biodegradable elements

Historical Analysis of Marine Pollution in Nigeria

The historical analysis and examination of marine pollution in Nigeria cannot be completed without reference to the country's diverse natural heritage and the challenges posed by contemporary industrialization (Umeh et al., 2024: 441). In other words, the origin of marine pollution in Nigeria is in connection with the commencement of industrialization and the rapid expansion of metropolitan areas, which have aided human activities that unintentionally impacted the environment. Today, there is a narrative of progressive decline of the environment, due to the above fact and lack of responsive environmental management. Indeed, reflection on the marine environment is entangled with so many setbacks. These setbacks include but are not limited to pollution, gas flaring, bunkery and emissions. These issues of marine environmental pollution are both sensitive and urgent (UNO, 2004). Hence, they have obstructed the good atmosphere that ought to exist in the country especially in the Niger Delta region. When we talk about pollution, we are simply talking about pollution from domestic sources, pollution from industrial sources, pollution from agrochemicals siltation and sedimentation, oil pollution and microbial pollution. These and many more increase the temperature of the environment (Nyrop, 1975), and trigger ecological manipulations. This obstruction orchestrated by environmental degradation and pollution inflicts pains on the habitats of the environment and brings about depletion of resources. It equally hampers and tampers with the biosphere, wildlife, water, soil and air, and distorts our peaceful co-existence.

Furthermore, the most affected communities of this environmental pollution, which is Niger Delta Communities (NDCs) where the oil and gas production primarily take place in Nigeria hardly benefit from the huge oil income, even when they are the most degradable and affected; as their means of livelihood such as fishing, farming and conducive environment are deprived of them (Oguduvwe, 2013., Oluduro & Oluduro, 2012). This is not completely correct, owing to the fact that government being sensitive of the matter under discussion had set up a commission which is today regarded as Niger Delta Development Commission (NDDC), as form of government's compensation scheme (Osamuyimen, 2020). As this cannot be disputed, it is

essential and imperative also to monitor the leadership of the commission in ensuring that what is mapped out to douse the tension, occasioned by pollutions and emissions in the said region is used wisely and justly. Be that as it may, this research is to retrain the Nigerian populace and the government at large, on the need to checkmate the environmental offenders, non-biodegradable elements or debris on the ocean and seaways. When this is achieved, the marine environment that has been polluted and disrupted will be salvaged, for national economic growth, defence and sustainability of human, plant and animal species.

The Effects of Marine Pollution

The marine environment that is capable of ushering in progress and development is contaminated and threatened in so many ways in Nigeria. The seawater temperature is risen, commercial transport and submarine trawling operations affected. All these are due to the pollutants which have defaced the ocean and marine ecosystems. “The effect of marine pollution on water bodies and coastal areas causes degradation to the environment and its ecosystem” (Alari, 2019). Nigerian Coastal waters like all coastal and port countries in the world, experiences the problem of marine pollution, through industrial activity at the ports. And like some other petroleum producing nations, Nigeria's marine pollution challenge is exacerbated and ignited by oil and gas exploration/flaring and production. Marine pollution arising out of petroleum harnessing is a major cause of the social unrest in the area which has over the years attracted national and international attention, thus causing the Nigerian government to take extraordinary measures to stem the tide, like the imaginative establishment of the Niger Delta Development. This, they did, as the heat of the oil exploration and gas flaring, affect those in the riverine areas mostly. It is in line with these maritime threats, and to protect country's economy, which is majorly attached to the maritime sector (Peretomode, 2014), that this research sets out as its task to examine and expose the effects of marine pollution, notes its implications and suggest ways to strengthen maritime sector, with a view to ending the social, economic and environmental plight of marine pollution. To do this effectively, various effects of marine pollution which include; degradable effect, effects from plastic litters, damage to ecosystem, depletion of dissolved oxygen and eutrophication effects will be highlighted.

1. **Degradable Effect:** marine pollution has a degradable effect to the environment, as it endangers species, which leads to biodiversity depletion. Oh yes, There is always loss in value of plant and animal species when the environment is degraded or tampered with. This degradation that is a resultant effect of marine pollution equally reduce both the quality and quantity of species that were supposed to exist in the maritime environment, and in turn, affects the expected economic benefit of the nation.
2. **Effects from Plastic litters:** Plastic debris is a non-biodegradable element that can reduce marine resources and national productivity when it gets concentrated in certain area (Elenwo and Akankali, 2015). It can also barricade and obstruct the movement of boat and ship, thereby, affecting quality distribution of goods and services within and outside the country. When this happens, the interrelationship and exchanges that ought to exist between the nation and other countries of the world are jeopardized.
3. **Damage to Ecosystem:** Thermal pollution generates heat, which is an important form of energy concern that impacts the aquatic environment. Put differently, thermal Pollution causes rise in temperature, which in turn leads to ocean acidification and death of aquatic habitats.

4. **Depletion of Dissolved Oxygen in Water:** This phenomenon often leads to the damage of marine ecosystem. Dumping of organic waste or sewage loaded with organic effluents into the marine environment can lead to depletion of dissolved oxygen and affect the biosphere (plant and animal species). It is on this note that this paper suggests that the waste should always be burnt or recycled in order not to distort the serenity of the marine environment.
5. **Eutrophication Effects:** The ecosystem is affected when the sewage is not properly treated. The untreated or partially treated sewage effluents are capable of destroying plant and animal, and may result to change in biodiversity. When this becomes the case, the expected natural nutrient required for the growth of organisms will be nowhere to be found. Hence, there will be excessive growth of algae and diminished oxygen content.

To abhor or avert these outlined effects and problems, it is essential, expedient and imperative to take care and strengthen the marine environment, for easy fishing, boosting of national resources and transportation of goods and services. More so, Nigeria government is urged to look into the available, but long forgotten rules and regulations guiding the marine environment. This will help in regaining the already lost resources and help to avoid pollutants that are capable of deteriorating our health and reducing the life span of other living organisms. When this is achieved, the nation's marine environment that has been neglected due to pollution and gas emissions will be rejuvenated, to create jobs and opportunities for the citizenry.

The Control and Preventive Measures of Marine Pollution

To prevent or reduce the number of waste materials or debris, for marine environmental growth and sustainability, there is a need to provide incentives for collection and recycling of the said waste items (UNEP, 2016). The issue of non-degradable elements which lead to marine pollution can be handled, therefore, when incentives are given to consumers for collection and factories for recycling. In doing this, the economy of so many factories that are already dying off will be boosted. This will equally encourage both government and enterprising individuals to invest in recycling factory businesses. Furthermore, for marine pollution to be controlled or prevented, marine industry or marine related companies must be engaged from time to time in trying to educate and remind the members of the companies how important it is to always care for the environment. This will go a long way, since “many large companies have a global reach with the ability to influence the production, consumption and end-of-life management of their products” (Global Declaration, 2014). Again, retraining of the minds of the Nigeria populace, through environmental education, to be aware of the health implications of marine pollution is vital.

Hence, the campaign and awareness will put to the consciousness of the public, the need to protect the marine environment for immediate and futuristic benefits. It will also reposition the mindsets of many people who often see waste as something that has no advantage to the societal development. Bearing in mind that waste materials are used to generate energy and electricity today. It is in view of this and so many other benefits that the waste materials are to be monitored, controlled and prevented from littering the environment. It is under this ambience, that the over stressed seaways can be stabilized, for marine environmental development.

Conclusion

This research showcased the level of marine environmental pollution in Nigeria, and provided the way forward to control and prevent it from endangering the existing biodiversity. It established that marine environment is full of potentials, and is capable of providing

opportunities and boosting nation's economy, If and only if government can play her part in ensuring that the available laws on the marine ecosystems meant to sanction environmental offenders are carried out effectively and efficiently. It further demonstrated that lack of incentives or factories that can recycle environmental debris and knowledgeable consumers on the negative effects of marine pollution is the reason for the environmental decadence or degradation that threatens the peace and resources of the nation and maritime sectors. More so, it enumerated the effects of marine pollution, and how the untreated and partially treated sewage effluents can lead to death of plant and animal species, and prevent transportation of goods and services, tourism, fishing and economic linkages of different countries of the world.

Furthermore, the research work sets out to educate the consumers, especially those from the remote parts of the country on the need to protect the marine environment, and put to the consciousness of individuals who live in the riverine areas, the need to maintain and manage the environment, as there are many health benefits attached to serene area/environment. These recommendations when internalized will revitalize the aquatic and agricultural products of the said region, which have been epileptic as a result of constant marine environmental pollution. However, this research will renew the dying hope of the national economic resources, which have, for decades, jeopardized, due to incessant pollution and obstacles in the ecosystem. It will equally be a source of redirection to those who do not know or adamant of the legal, health and socio-economic implications of the marine environment.

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